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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,187	08/02/2001	Werner Knebel	21295/32	5266

7590

06/23/2003

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EXAMINER

ESPLIN, DAVID B

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 06/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/682,187

Applicant(s)

KNEBEL, WERNER

Examiner

D. Ben Esplin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☒ Claim(s) 3, 6, 7, 9, 14, 16 and 22 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the embodiment in which the means for spectral dispersion changes position relative to the detection apparatus (claims 1-7, and 15-18), the galvanometer (claims 16 and 17), the piezoelements (claim 18), the reflection grating (claims 7 and 22), and the transmission grating (claims 7 and 22) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 3, 6, 7, 9, 14, 16, and 22 are objected to because of the following informalities: These claims contain grammatical errors that for examination have been interpreted as follows:

claim 3, in the second line, the phrase "a the paof the th light beam awherein nd the relative", has been interpreted as "in the path of the light beam, and wherein the relative";

claim 6, in the second line, the word "apparatoocurrecalong", has been deemed by the Examiner as unintelligible and has not examined the claim any further on its merits;

claim 9, in the second line, the work "slinge", has been interpreted as "single";

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claim 14, in the second line, the phrase "optical componeis nt arranged", has been interpreted as "optical component is arranged"; and

claim 16, in the second line, the word "accomplished", has been interpreted as "accomplish".

Claims 7 and 22 are objected to because of the following informalities: The recitation that the means for spectral dispersion consists of "a prism, a reflection grating, and a transmission grating", has been interpreted to mean " a prism, reflection grating, or a transmission grating", since a means including all three of these elements is not shown in the drawings or described in the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 and 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 depends from claim 1, which does not include the limitation that the light beam and the detection apparatus change position with respect to one another, so this element lacks a proper antecedent basis. Claim 1 includes the similar limitation that the means for spectral dispersion and the detector change position with respect to one another. However, this could not be accomplished by merely moving an optical component between the two elements since the claim language requires that both of the physical elements actually change location.

Due to the confusion created by this recitation, claims 3 and 4 have not been examined further on its merits. Further, claim 4 requires the optical component to be located between the means and the detector, and before the detector. Since this is impossible, it renders the claim unclear.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5-7, 8, 12, 13, 15, and 19-25 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,886,784 to Engelhardt.

FIG. 5 of Engelhardt shows an optical arrangement including means for spectral dispersion (means for splitting 27) of the light beam thereby defining a spectrally dispersed light beam, means for selecting a definable spectral region (means 28), and a detection apparatus (see col. 5 lines 40-42), wherein the means for spectral dispersion of the light beam and the detection apparatus change their position relative to one another, the means for spectral dispersion along arrow 40, and the detector changes angular alignment and/or position (col. 5 lines 40-42). Further, the means for spectral dispersion shown is a prism. By changing the positions of the means for spectral dispersion and the detection apparatus the positions of the spectrally dispersed light beam and the detectors are also changed relative to one another. FIG.1 of Engelhardt shows a scanning confocal microscope containing the optical arrangement described above, including a scanning mirror 10 for the scanning operation of the microscope.

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 9, 10, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S.

Patent No. 6,483,103 to Engelhardt, Hay and Hoffmann.

The applied reference has a common assignment with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

FIG. 1 of Engelhardt/Hay/Hoffman shows an optical arrangement for a confocal scanning microscope including a laser light source (col. 4 line 16) generating a light beam (light beam 6), means for spectral dispersion (prism 7) of the light beam in the detection beam path, means for selecting a definable spectral region of the light beam (optical component 4), and a single detection apparatus (detector 3), wherein in order to influence the spectral region the spectrally dispersed light beam and the detection apparatus change their position relative to one another by shifting the optical component that forms the means for selecting along directions 8 and/or 9.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt as applied to claims 1, 2, 5-7, 8, 12, 13, 15, and 19-25 above.

While Engelhardt does not teach of a specific method for rotating the means for spectral dispersion, the use of galvanometers and piezoelements for manipulating optical components were well known in the art. Applicant acknowledges as much in the disclosure by failing to specifically show or describe any such arrangements of means for dispersion and actuator. Therefore, it would have been obvious to employ a well known means for optical component manipulation, such as a galvanometer or piezoelements, for rotating the means for spectral dispersion, as taught by Engelhardt.

Claims 26 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelhardt as applied to claims 1, 2, 5-7, 8, 12, 13, 15, and 19-25 above, and further in view of U.S. Patent No. 6,462,345 to Simon et al.

Although Engelhardt fails to teach of coupling light upon input into the scanning microscope using an acousto-optical tunable filter or acousto-optical beam splitter, Simon teaches that coupling input light into a scanning microscope using acousto-optical tunable filters was well known for reducing radiation loading (col. 2 lines 52-56 and col. 3 lines 43-52). So it

would have been obvious to couple light being input into the microscope of Engelhardt using acousto-optical filters in order to reduce radiation loading.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,555,811 to Amos discloses a scanning confocal microscope including a spectrally dispersed light beam and a detector that change position relative to each other.

U.S. Patent No. 3,971,921 to Schit et al. discloses an optical arrangement including an optical component that changes the relative position of a spectrally dispersed beam of light placed before a means for spectrally dispersing the light.

U.S. Patent No. 6,195,202 to Kusunose discloses that galvanometers were well known for manipulating optical components.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. Ben Esplin whose telephone number is (703) 305-4022. The examiner can normally be reached on Mon.-Fri. (8am-4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell E. Adams can be reached on (703) 308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DBE

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June 18, 2003



RUSSELL ADAMS

SUPERVISORY PATENT EXAMINER
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